REMARKS/ARGUMENTS

Claims 1, 4 and 7 have been amended without prejudice or disclaimer. New claims 8-12 and 13 have been added. No new matter has been added. Claims 1, 4-7 and 8-13 remain in the application. Reconsideration of this application is respectfully requested.

Rejection - 35 U.S.C. § 102(e)

Claims 1 and 4-7 were rejected under 35 U.S.C. § 102(e) as being anticipated by US 6,207,475 (Lin).

Applicants traverse in part and amend in part.

MPEP 2131 sets forth the requirements for anticipation and states that "to anticipate a claim, the reference must teach every element of the claim". This section of the MPEP goes on to state (citing case law, references to which have been omitted) that "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference" and "the identical invention must be shown in as complete detail as is contained in the ... claim". Moreover, "the elements must be arranged as required by the claim". The cited reference fails to meet this requirement for anticipation of any of the rejected claims.

The Examiner interprets (page 3 of Office Action) the features (56/ 60) of Lin to equate to Applicants' component 108. Lin teaches that (56) is a substrate and that the substrate may be either a printed circuit board or an interposer (col. 3, lines 1-2; col. 8, lines 46-48) having a top surface (60). Applicants assert that Lin's substrate (56/60) does not anticipate Applicant's component 108. Lin teaches mounting an IC die (44) onto substrate (56/60) – not vice versa.

Additionally, the term "underfill" as used in Lin's patent does not anticipate Applicant's adhesive material. Lin teaches in col. 2, lines 65-67 through col. 2, lines 1-8 that a method for alleviating thermal strains is the introduction of an <u>encapsulating layer between</u> the silicon <u>chip</u> and the organic <u>substrate</u>. The encapsulating material, known as an underfill...is used to <u>fill the gap</u> (or standoff) between the printed circuit board and the silicon

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chip... the underfill forms a bond <u>between</u> the polyimide layer on the <u>chip</u> and the organic <u>substrate</u> of the printed circuit board <u>encapsulating</u> the solder joints. Applicants claim that the adhesive is outside of the component area in each independent claim - there is no standoff or gap to fill. Also, in col. 2. lines 47-53, the Lin reference teaches that air entrapment in the underfill material is inevitable and that trapped air bubbles in the underfill affects mechanical strength and the adhesion formed between the underfill material and the IC die or the substrate. Applicants explained on page 3, lines 12 of the specification that the adhesive material 104 is placed away from the affected area of (component) attachment. Lin's underfill teaches away from that which is claimed by Applicants.

The Lin reference provides a method of injecting epoxy under a BGA to provide "interstitial" bonding of the IC Chip with an existing solder ball array. Applicants' invention, on the other hand, provides a method of retaining a sheet of thermally & electrically conductive material (solder preform) in place during oven reflow to physically bond components (PA's/IC's) to the substrate (shields/heatsinks). Instead of injecting the epoxy as done in Lin, Applicants' adhesive is pre-applied in a controlled and fixed location to allow for more intimate contact to the substrate (heatsink).   This achieves a smaller gap than allowed with BGA's by keeping the glue from mixing into this interface. In other words, Applicants' invention is the opposite of Lin's invention - Applicants deliberately seek to have the adhesive to *stay out* of the interface.

However, taking the Examiner's position that features (56/60) of Lin are to be interpreted as the component, Applicants assert that the claims, as amended, are not anticipated by Lin. Lin's underfill (84) makes contact with feature (60) during reflow and post reflow. Applicants have amended the independent claims 1, 4 and 7 in order to more clearly define this aspect of the invention. No new matter has been added. Support for this amendment is found in FIG. 1 and throughout the specification, such as for example on page 6, lines 1-3. Applicants have further amended claims 4-6 and 7 to use the term "preform" which is supported throughout the specification.

Accordingly claims 1, 4 and 7, as amended, are believed to be in condition for allowance. Claims 5 and 6 provide further limitations to what is believed to be an allowable claim 4 and hence are also in condition for allowance.

New claims 8-12 have been added. No new matter has been added. Support for these claims is found throughout the specification and FIG. 1. Applicants have also added a method claim 13 that they believe also falls within the Group 1 set of claims. A method is supported from page 6, line 21 of the specification.

No amendment made was related to the statutory requirements of patentability unless expressly stated herein. No amendment made was for the purpose of narrowing the scope of any claim, unless Applicant has argued herein that such amendment was made to distinguish over a particular reference or combination of references.

The Applicants believe that the subject application, as amended, is in condition for allowance. Such action is earnestly solicited by the Applicants.

In the event that the Examiner deems the present application non-allowable, it is requested that the Examiner telephone the Applicant's attorney or agent at the number indicated below so that the prosecution of the present case may be advanced by the clarification of any continuing rejection.

The Commissioner is hereby authorized to charge Deposit Account 502117, Motorola, Inc, with any fees which may be required in the prosecution of this application.

Respectfully submitted,

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